

<b>[C]</b> Communication	<b>[PS]</b> Problem Solving
<b>[CN]</b> Connections	<b>[R]</b> Reasoning
<b>[ME]</b> Mental Mathematics and Estimation	<b>[T]</b> Technology
	<b>[V]</b> Visualization

**Strand:**  
Number

**General Outcome:**  
Develop number sense.

**Specific Outcomes**

*It is expected that students will:*

**Achievement Indicators**

*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

1.N.1. Say the number sequence by

- 1s forward and backward between any two given numbers (0 to 100)
- 2s to 30, forward starting at 0
- 5s and 10s to 100, forward starting at 0

[C, CN, ME, V]

- Recite forward by 1s the number sequence between two given numbers (0 to 100).
- Recite backward by 1s the number sequence between two given numbers.
- Record a numeral (0 to 100) symbolically when it is presented orally.
- Read a numeral (0 to 100) when it is presented symbolically.
- Skip-count by 2s to 30 starting at 0.
- Skip-count by 5s to 100 starting at 0.
- Skip-count by 10s to 100 starting at 0.
- Identify and correct errors and omissions in a number sequence.

1.N.2. Subitize and name familiar arrangements of 1 to 10 dots (or objects).

[C, CN, ME, V]

- Look briefly at a familiar dice arrangement of 1 to 6 dots, and identify the number represented without counting.
- Look briefly at a familiar ten-frame arrangement of 1 to 10 dots (or objects), and identify the number represented without counting.
- Look briefly at a finger arrangement, and identify how many fingers there are without counting.
- Identify the number represented by an arrangement of dots (or objects) on a ten frame, and describe the number's relationship to 5 and to 10.

1.N.3. Demonstrate an understanding of counting by

- using the counting on strategy
- using parts or equal groups to count sets

[C, CN, ME, R, V]

(It is intended that the sets be limited to less than 30 objects and that students count on from multiples of 2, 5, and 10 respectively.)

- Determine the total number of objects in a set, starting from a known quantity and counting on by 1s.
- Count number of objects in a set a using groups of 2s, 5s, or 10s.
- Count the total number of objects in a set, starting from a known quantity and counting on by using groups of 2s, 5s, or 10s.

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**Strand:**  
Number (*continued*)

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Develop number sense.

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- 1.N.4. Represent and describe numbers to 20, concretely, pictorially, and symbolically.  
[C, CN, V]

- Represent a number up to 20 using a variety of manipulatives, including ten frames and base-10 materials.
- Read number words to 20.
- Partition any quantity up to 20 into two parts, and identify the number of objects in each part.
- Represent a number to 20 in two parts, concretely, pictorially, and symbolically.
- Determine compatible number pairs for 5, 10, and 20.
- Model a number using two different objects (e.g., 10 desks represents the same number as 10 pencils).
- Place numerals on a horizontal or vertical number line with benchmarks 0, 5, 10, and 20.

- 1.N.5. Compare and order sets containing up to 20 elements to solve problems using
- referents
  - one-to-one correspondence
- [C, CN, ME, PS, R, V]

- Build a set equal to another set that contains up to 20 elements.
- Build a set that has more, fewer, or as many elements as another set.
- Build several sets of different objects that have the same number of elements in the set.
- Compare two sets using one-to-one correspondence, and describe them using comparative words such as "more," "fewer," or "as many."
- Compare a set to a referent using comparative language.
- Solve a story problem (pictures and words) that involves the comparison of two quantities.

- 1.N.6. Estimate quantities to 20 by using referents.  
[C, ME, PS, R, V]

- Estimate a quantity by comparing it to a referent (known quantity).
- Select an estimate for a quantity by choosing between at least two possible choices, and explain the choice.

Grade 1

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<b>Strand:</b> Number <i>(continued)</i>	<b>General Outcome:</b> Develop number sense.
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<b>Specific Outcomes</b> <i>It is expected that students will:</i>	<b>Achievement Indicators</b> <i>The following set of indicators <b>may</b> be used to determine whether students have met the corresponding specific outcome.</i>
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<p>1.N.7. Demonstrate, concretely and pictorially, how a number, up to 30, can be represented by a variety of equal groups with and without singles. [C, R, V]</p>	<ul style="list-style-type: none"> <li>■ Represent a number in a variety of equal groups with and without singles (e.g., 17 can be represented by 8 groups of 2 and one single, 5 groups of 3 and two singles, 4 groups of 4 and one single, 3 groups of 5 and two singles, and 1 group of 10 with seven singles).</li> <li>■ Recognize that for a number of counters, no matter how they are grouped, the total number of counters does not change.</li> <li>■ Group a set of counters into equal groups with and without singles in more than one way, and explain which grouping makes counting easier.</li> </ul>
<p>1.N.8. Identify the number, up to 20, that is one more, two more, one less, and two less than a given number. [C, CN, ME, R, V]</p>	<ul style="list-style-type: none"> <li>■ Name the number that is one more, two more, one less, or two less than a given number, up to 20.</li> <li>■ Represent a number on a ten frame that is one more, two more, one less, or two less than a given number.</li> </ul>

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**Strand:**  
Number (*continued*)

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1.N.9. Demonstrate an understanding of addition of numbers with answers to 20 and their corresponding subtraction facts, concretely, pictorially, and symbolically, by

- using familiar and mathematical language to describe additive and subtractive actions from their experience
- creating and solving problems in context that involve addition and subtraction
- modelling addition and subtraction using a variety of concrete and visual representations, and recording the process symbolically

[C, CN, ME, PS, R, V]

- Act out a story problem presented orally or through shared reading.
- Indicate if the scenario in a story problem represents additive or subtractive action.
- Represent the numbers and actions presented in a story problem by using manipulatives, and record them using sketches and/or number sentences.
- Create a story problem for addition that connects to student experience, and simulate the action with counters.
- Create a story problem for subtraction that connects to student experience, and simulate the action with counters.
- Create a story problem for a number sentence.
- Represent a story problem pictorially or symbolically to show the additive or subtractive action, and solve the problem.

1.N.10. Describe and use mental mathematics strategies (memorization not intended), including

- counting on or counting back
- using one more or one less
- making 10
- starting from known doubles
- using addition to subtract

to determine the basic addition and related subtraction facts to 18.

[C, CN, ME, PS, R, V]

(It is not intended that students recall the basic facts but become familiar with strategies to mentally determine sums and differences. Students should show their strategy using manipulatives or visual aids.)

- Use and describe a personal strategy for determining a sum.
- Use and describe a personal strategy for determining a difference.
- Describe and write the related subtraction fact for an addition fact.
- Describe and write the related addition fact for a subtraction fact.

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<b>Strand:</b> Patterns and Relations (Patterns)	<b>General Outcome:</b> Use patterns to describe the world and solve problems.
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<p>1.PR.1. Demonstrate an understanding of repeating patterns (two to four elements) by</p> <ul style="list-style-type: none"> <li>■ describing</li> <li>■ reproducing</li> <li>■ extending</li> <li>■ creating</li> </ul> <p>patterns using manipulatives, diagrams, sounds, and actions. [C, PS, R, V]</p>	<ul style="list-style-type: none"> <li>■ Describe a repeating pattern containing two to four elements in its core.</li> <li>■ Identify errors in a repeating pattern.</li> <li>■ Identify the missing element(s) in a repeating pattern.</li> <li>■ Create and describe a repeating pattern using a variety of manipulatives, musical instruments, and actions.</li> <li>■ Reproduce and extend a repeating pattern using manipulatives, diagrams, sounds, and actions.</li> <li>■ Identify and describe, using everyday language, a repeating pattern in the environment (e.g., classroom, outdoors).</li> <li>■ Identify repeating events (e.g., days of the week, birthdays, seasons).</li> </ul>
<p>1.PR.2. Translate repeating patterns from one representation to another. [C, R, V]</p>	<ul style="list-style-type: none"> <li>■ Represent a repeating pattern using another mode (e.g., actions to sound, colour to shape, ABC ABC to blue yellow green blue yellow green).</li> <li>■ Describe a repeating pattern using a letter code (e.g., ABC ABC...).</li> </ul>

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**Strand:**  
Patterns and Relations (Variables and Equations)

**General Outcome:**  
Represent algebraic expressions in multiple ways.

**Specific Outcomes**

*It is expected that students will:*

**Achievement Indicators**

*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

1.PR.3. Describe equality as a balance and inequality as an imbalance, concretely and pictorially (0 to 20).  
[C, CN, R, V]

- Construct two equal sets using the same objects (same shape and mass), and demonstrate their equality of number using a balance scale.
- Construct two unequal sets using the same objects (same shape and mass), and demonstrate their inequality of number using a balance scale.
- Determine if two concrete sets are equal or unequal, and explain the process used.

1.PR.4. Record equalities using the equal symbol (0 to 20).  
[C, CN, PS, V]

- Represent an equality using manipulatives or pictures.
- Represent a pictorial or concrete equality in symbolic form.
- Provide examples of equalities where the sum or difference is on either the left or right side of the equal symbol (=).
- Record different representations of the same quantity (0 to 20) as equalities.

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<b>Strand:</b> Shape and Space (Measurement)	<b>General Outcome:</b> Use direct or indirect measurement to solve problems.
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<b>Specific Outcomes</b> <i>It is expected that students will:</i>	<b>Achievement Indicators</b> <i>The following set of indicators <b>may</b> be used to determine whether students have met the corresponding specific outcome.</i>
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<p>1.SS.1. Demonstrate an understanding of measurement as a process of comparing by</p> <ul style="list-style-type: none"> <li>■ identifying attributes that can be compared</li> <li>■ ordering objects</li> <li>■ making statements of comparison</li> <li>■ filling, covering, or matching</li> </ul> <p>[C, CN, PS, R, V]</p>	<ul style="list-style-type: none"> <li>■ Identify common attributes, such as length (height), mass (weight), volume (capacity), and area, which could be used to compare a set of two objects.</li> <li>■ Compare two objects and identify the attributes used to compare.</li> <li>■ Determine which of two or more objects is longest/shortest by matching, and explain the reasoning.</li> <li>■ Determine which of two or more objects is heaviest/lightest by comparing, and explain the reasoning.</li> <li>■ Determine which of two or more objects holds the most/least by filling, and explain the reasoning.</li> <li>■ Determine which of two or more objects has the greatest/least area by covering, and explain the reasoning.</li> </ul>
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**Strand:**

Shape and Space  
(3-D Objects and 2-D Shapes)

**General Outcome:**

Describe the characteristics of 3-D objects and 2-D shapes,  
and analyze the relationships among them.

**Specific Outcomes**

*It is expected that students will:*

**Achievement Indicators**

*The following set of indicators **may** be used to determine whether students  
have met the corresponding specific outcome.*

1.SS.2. Sort 3-D objects and 2-D shapes using one attribute, and explain the sorting rule.  
[C, CN, R, V]

- Sort a set of familiar 3-D objects or 2-D shapes using a given sorting rule.
- Sort a set of familiar 3-D objects using a single attribute determined by the student, and explain the sorting rule.
- Sort a set of 2-D shapes using a single attribute determined by the student, and explain the sorting rule.
- Determine the difference between two pre-sorted sets of familiar 3-D objects or 2-D shapes, and explain a possible sorting rule used to sort them.

1.SS.3. Replicate composite 2-D shapes and 3-D objects.  
[CN, PS, V]

- Select 2-D shapes from a given set of 2-D shapes to reproduce a composite 2-D shape.
- Select 3-D objects from a given set of 3-D objects to reproduce a composite 3-D object.
- Predict and select the 2-D shapes used to produce a composite 2-D shape, and verify by deconstructing the composite shape.
- Predict and select the 3-D objects used to produce a composite 3-D object, and verify by deconstructing the composite object.

1.SS.4. Compare 2-D shapes to parts of 3-D objects in the environment.  
[C, CN, V]

- Identify 3-D objects in the environment that have parts similar to a 2-D shape.